

REMARKS / ARGUMENTS

The action by the Examiner in this application, together with the references cited, have been given careful consideration. In response to such consideration, claims 2, 5 and 6 have been amended to define more clearly the patentable invention Applicant believes is disclosed herein.

Applicant believes that the Final rejection issued by the Examiner is premature, and therefore requests that the Examiner reconsider the Final rejection and withdraw the finality of the rejection. The Final rejection is not proper because the addition of the new claim language regarding the "central position of said raising and lower pole" raises new issues that would not have been rejected on the grounds and the art of record. The issue regarding the position of the raising and lowering poles was not raised in the prior application, and the grounds that the Examiner now argues why such claims are obvious were first presented in this Office Action. These grounds of rejection were not previously "of record." Therefore, the new limitations added to the claims and the new grounds of rejection raised by the Examiner do not support a Final rejection under MPEP Section 706.07(b) at this time. It is therefore requested that the finality of this Office Action be removed, and that the Examiner address the issues raised in this Response.

As the Examiner well knows, the present invention relates to an article conveying apparatus for conveying articles between a plurality of article storage sections. The apparatus includes a truck body and raising and lowering poles, all formed from rectangular pipe. In this respect, the foregoing elements have four planar side surfaces that define the rectangular cross-sectional configuration of the structure. The truck body is an elongated element having distal ends. The truck body is horizontally oriented and is adapted to move horizontally in a longitudinal direction. The truck body is oriented such that two of the flat sides are vertically oriented. In accordance with one aspect of the present invention, the raising and lowering poles are attached to one of the vertically oriented flat sides of the truck body. In this respect, the poles extend vertically and perpendicularly to the truck body.

An object of the present invention is to provide an "article conveying apparatus that enables the machine length to be reduced." The running truck body, the upper truck body and

the raising and lowering poles are each comprised of the one-piece rectangular pipe having four flat sides, so that the above object can be achieved by a combination of the rectangular pipes.

The overall machine length of conventional article conveying apparatus is increased by the parts being disposed outside the raising and lowering masts. Accordingly, when articles are transferred to the article storage sections located at the opposite ends of the shelf, the parts disposed outside the raising and lowering masts protrude from the space in the shelf in which the article storage sections are provided. Consequently, article storage sections of the shelf cannot be provided opposite these protruding parts. Therefore, when the automatic warehouse facility is located in a small space, it may be difficult to ensure a required shelf storage volume.

Reduction of the machine length of the article conveying apparatus makes it possible to increase the number of the article storage sections that are accessible by the article conveying apparatus, thereby maximizing shelf storage volume in a warehouse facility. Thus, it is possible to improve the efficiency of storing articles and the value of the facility.

The claims essentially stand rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 4,113,119 to Brown et al. in view of newly-cited U.S. Patent No. 6,190,853 to Paulmichl.

The Examiner takes the position that the Paulmichl reference discloses "poles 14-17 from one-piece rectangular pipe." The Examiner argues:

"It is noted that as Paulmichl discloses seamless rectangular tubing they inherently are formed from one-piece rectangular pipe."

Applicant respectfully submits that the Paulmichl reference does not teach, suggest or show one-piece rectangular pipe. "One of the factual underpinnings of an obviousness determination is what a reference would have disclosed to one of ordinary skill in the art." (Emphasis added) *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc.*, 145 F.3d 1303, 46 USPQ2d. "What a reference 'teaches' and what it 'suggests' are 'two different inquiries.'" *In re Lueders*, 111 F.3d 1578, 42 USPQ2d 1481 (Fed. Cir. 1997). "[W]hat a reference teaches is a question of fact." *In re Beattie*, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041-42 (Fed. Cir. 1992).

As the Federal Circuit indicates, what a reference teaches to one skilled in the art is a question of fact. It is a fact that the Paulmichl reference does not teach or disclose use of a rectangular pipe. As indicated in a previous Response, nowhere in the '853 patent to Paulmichl is the term "rectangular pipe" found. A computer search of the text of the cited '853 patent was conducted, and the term "pipe" did not appear in the patent text. The term "rectangular" appeared only once in column 4, line 6 that referred to the shape of pallet 1. More importantly, the '853 patent specifically indicates that the four (4) vertical guides or guide rails 14, 15, 16 and 17 have a "U-shape horizontal cross-section." (See column 5, lines 1-2 of the '853 patent).

Since the Paulmichl patent makes no reference to a rectangular pipe and in fact teaches vertical guides and guide rails 14, 15 having "U-shape horizontal cross-section," pursuant to the Federal Circuit's ruling, the Paulmichl reference does not teach or show the use of rectangular pipe.

To the extent that the Examiner takes the position that the Paulmichl reference "suggests" use of rectangular pipe, Applicant respectfully submits that one skilled in the art would not find such suggestion in the Paulmichl reference. FIG. 2 of the Paulmichl reference, cited by the Examiner as showing "poles 14-17 from one-piece rectangular pipe," are in fact rollers 18, 19 that "run in the guide rails or carriers." (See column 5, line 4 of the Paulmichl reference). Thus, one skilled in the art would have to completely misconstrue rollers 18, 19 in vertical carriers or guide rails 14-17, to find a "suggestion" of rectangular pipes. Applicant respectfully submits that it is only with the benefit of hindsight, after reviewing Applicant's disclosure, would one skilled in the art find a suggestion of rectangular pipe in the Paulmichl reference. Accordingly, since the Paulmichl reference does not teach, suggest or show the use of a "one-piece rectangular pipe," the combination proposed by the Examiner to reject the claims can no longer stand.

With respect to the newly added limitations regarding the "central position" of the raising and lowering poles, the Examiner takes the following position:

"It is noted that "central position" is a relative term. A line that runs through the center of Brown's poles 22 is a center line as it runs through the center of the poles. This is also the center line of the apparatus as a whole as the apparatus comprises the poles 22. And where ever the apparatus operates is inherently a work passage. Thus, the center line of the apparatus is inherently in the

exact position as the center of the work passage.” *(See Page 3 of the Final Office Action dated February 15, 2007).*

Applicant respectfully disagrees. Applicant respectfully submits that as defined in the claims, the term “central position” is not a relative term. Claim 2 defines a central position of the raising and lowering poles is substantially the central position of the article conveying apparatus. The central position is defined as coinciding with a substantially central position of the work passage between article storage sections. A center line between two article storage sections is not indefinite, but it is a point equidistant from both storage sections.

With respect to the Examiner’s comments with respect to “poles 22,” it is believed that the Examiner is referring to poles 33, 34 of the Brown et al. reference. In this respect, reference number 22 in the Brown et al. reference refers to “rotatable rollers.” To the extent that the Examiner’s position is based upon reference to poles 33, 34, Applicant respectfully disagrees. As best seen in FIG. 3 of the Brown et al. reference, vertical poles 33, 34 are clearly disposed to one side of the central portion of apparatus 10, and further, are not disposed to travel along a central position that “coincides with a substantially central position of the work piece passage between both article storage sections.”

For the foregoing reasons, it is respectfully submitted that claims 2, 4-5 and 9 are not unpatentable over the Brown et al. and Paulmichl references, for the reasons set forth above.

Further, with respect to **claim 4**, the cited references do not teach, suggest or show “a centerline of the rectangular pipe forming said raising and lowering poles is substantially a centerline of the article conveying apparatus when viewed along the direction of travel of said article conveying apparatus,” as specified in claim 4. Claim 4 has an advantageous effect in that the centerline of the rectangular pipe forming the raising and lowering poles is substantially a centerline of the article conveying apparatus when viewed along the direction of travel of the article conveying apparatus, so that the platform raised and lowered by the raising and lowering poles is positioned at the centerline of the article conveying apparatus and the transfer device attached to the platform can move equidistantly and horizontally with respect to the article storage sections disposed horizontally to transfer articles. Thus, the construction of the transfer device can be simplified to reduce the cost.

Further, with respect to **claim 5**, the cited references do not teach, suggest or show said running truck body being supported by wheels provided within the rectangular pipe forming the running truck body and in alignment with respective positions where the lower end portions of the rectangular pipe forming said raising and lowering poles are connected to the running truck body, as specified in claim 5. Claim 5 has an advantageous effect in that the wheels, which support the running truck body, are provided within the rectangular pipe forming the running truck body attached to the raising and lowering poles, so that the machine length of the article conveying apparatus can be reduced while ensuring the safety during running. A wheel is provided below the running truck body in the Paulmichl reference.

With respect to **claim 6**, the cited references do not teach, suggest or show “each of said raising and lowering ropes is guided from the upper part of said platform to the center of said running truck body via said driving wheel,” as specified in claim 6. Claim 6 has an advantageous effect in that the pair of the raising and lowering ropes is guided to the center of the running truck body, lead to the vicinity of the center of the platform and the returning part of the raising and lowering rope is arranged away from the raising and lowering poles, so that the returning part of the raising and lowering rope can be prevented from swinging to interfere with the raising and lowering pole. Therefore, the raising and lowering rope has only to be set for the minimum tension to reduce the burden on the raising and lowering rope. This makes it possible to use inexpensive raising and lowering ropes and reduce costs.

The Examiner takes the position that the Ohgita et al. reference discloses that “a pair of ropes 30 are connected to a platform 16 in a vicinity of a center.” Applicant disagrees. In the Ohgita et al. reference, the pair of ropes 30 is connected respectively to both sides of the upper part of the platform 16.

With respect to **claim 7**, the cited references do not teach, suggest or show “a tension setting device is located in said platform,” as specified in claim 7. Claim 7 has an advantageous effect in that the tension setting device is located on the platform, so that the conventional installation space for the tension setting device is saved within the running truck body, and the wheel, which supports the running truck body, can be moved inward and mounted inside the running truck body, and thereby reducing the machine length.

With respect to **claim 8**, the cited references do not teach, suggest or show “said drive running device located at a vertical side of the rectangular pipe forming said running truck body, the side being opposite from the vertical side surface of the rectangular pipe where said raising and lowering pole is connected to the vertical side surface of the rectangular pipe forming said running truck body,” as specified in claim 8. Claim 8 has an advantageous effect in that the drive running device is located at a vertical side of the rectangular pipe forming the running truck body, opposite from the vertical side surface of the rectangular pipe where the raising and lowering pole is connected to the vertical side surface of the rectangular pipe, so that the drive running device can be disposed as close to the driving wheel.

Brown et al. does not disclose a running drive device. Further, Piccini discloses the drive running device 202 located on an inner side of a metal frame forming a carriage 2.

With respect to **claim 9**, the cited references do not teach, suggest or show “a raising and lowering drive device is located at a latitudinal side of said running truck body,” as specified in claim 9. Claim 9 has an advantageous effect in that the raising and lowering drive device is located at a latitudinal end of the rectangular pipe forming said running truck body, so that the raising and lowering rope for raising and lowering the platform can be driven at the side of the running truck body, thereby enabling the raising and lowering rope driven by the raising and lowering drive device to be operated at the position lower than the running truck body.

Brown et al. does not disclose a raising and lowering drive device. Further Paulmichl et al. discloses telescopic cylinders 21, 22 corresponding to the raising and lowering drive device located on a pallet.

With respect to **claim 10**, the cited references do not teach, suggest or show “a control panel for the article conveying apparatus having at least one swinging door provided to face one longitudinal end of the running truck body, said control panel being located at an outside position of the raising and lowering poles and supported thereby,” as specified in claim 10. Claim 10 has an advantageous effect in that the control panel is supported at the outside position of the raising and lowering poles and the sides of the control panel face in the longitudinal direction, so that a large lateral spacing between the control panel and the article storage sections can be provided and an operator can move through the work passage more easily.

Brown et al. does not disclose a control panel. Further, Ohgita et al. discloses a control board 55 provided on a running truck body (FIG. 10) and a control board 135 provided in a maintenance elevator.

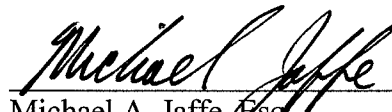
With respect to **claim 11**, Brown et al. does not disclose shock absorbers. Further, Benjamin discloses shock absorbers 35 provided at longitudinal ends of a running truck body 20, and when the shock absorbers 35 are pushed at an end stop position, signals are outputted to immediately stop driving the running truck body.

Claim 11 is different from Benjamin in that a shock absorber is located at a terminal end of the track and that a contact plate, which is brought into contact with the shock absorber, is located inwardly from the longitudinal ends of the running truck body. Claim 11 has an advantageous effect in that the contact plate, which is brought into contact with the shock absorber, is located inwardly from the longitudinal ends of the running truck body, so that the contact surface brought into contact with the shock absorber can be prevented from projecting out of the machine length of the article conveying apparatus, resulting in reduction of the machine length.

For the foregoing reasons, it is respectfully submitted that the claims in the present form are distinguishable from the cited references, and thus are in condition for allowance. Favorable action is therefore respectfully requested.

Respectfully submitted,

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